

## HUMANITAS UNIVERSITY

### Selection procedure for a Type B Research Fellowship in Life Sciences in compliance with art. 22 of law 240/2010

Humanitas University invites applications for a position as Research Fellow in Life Sciences.

Research Program Title	An integrative genomic approach to understand the transcriptional bases of intratumoral heterogeneity in human PDACs
Research supervisor - Tutor	Prof. Gioacchino Natoli
Scientific Area	05
Gross amount of the fellowship	35.000 Euro
Duration of the fellowship	36 months
Objectives of the research	Experiments of laser capture microdissection in primary human pancreatic ductal adenocarcinoma samples, followed by the generation of next generation sequencing libraries for RNA-sequencing, ChIP-sequencing and accessibility assays.  Production of multiplexed amplicon libraries for genomic analyses. Generation of human pancreatic cancer organotypic cultures

The work place is in Pieve Emanuele - Milano.

A brief description of the: project, activities to be carried out, mandatory requirements to take part into the selection process, information on the application procedure and on the selection criteria are presented in the following.

#### RESEARCH PROJECT:

This project aims at the systematic characterization of morphologically distinct tumor areas isolated from individual PDACs by laser capture microdissection, in order to link diverging phenotypes, transcriptional outputs and epigenomic profiles on the one hand with distinct mutational landscapes on the other. Regulatory circuits identified by computationally mining transcriptional, epigenomic and mutational features will

eventually be validated using genome editing approaches in cancer cell lines. Finally, to determine functional correlates and therapeutic implications of heterogeneity, and specifically to measure the adaptive responses of distinct PDAC components to therapy, we will use integrative genomic approaches to analyze morphologically defined tumor areas from organotypic PDAC cultures exposed in vitro to multiple pharmacological treatments. We expect that the detailed characterization and mechanistic understanding of cellular heterogeneity and its functional implications in human PDACs will contribute to the reassessment of the currently available therapeutic options, possibly leading to the identification of novel and more efficient therapeutic combinations that target the specific molecular features of all the distinct components of human PDACs.

#### **ACTIVITIES TO BE CARRIED OUT:**

The successful candidate will deal with:

- Experiments of laser capture microdissection in primary human pancreatic ductal adenocarcinoma samples, followed by the generation of next generation sequencing libraries for RNA-sequencing, ChIP-sequencing and accessibility assays.
- Production of multiplexed amplicon libraries for genomic analyses. Generation of human pancreatic cancer organotypic cultures

#### **MANDATORY REQUIREMENTS:**

In order to be considered for the post candidates must hold a Bachelor's degree obtained in accordance with DM 270/2004 or an equivalent Italian University degree or a comparable academic title granted by a foreign University (usually referred to as a Master's Degree) in in Biotechnologies, Degree in Medicine and Surgery, or Master degree in Biological Sciences; a PhD in Biomolecular Sciences.

#### **SELECTION PROCESS:**

The application for admission must be submitted at the following link:

<https://pica.cineca.it/humanitas>

No hard copy of the application must be sent by post.

At the first access, applicants need to register by clicking on "Register" and completing the requested data.

If applicants already have LOGINMIUR credentials, they do not need to register again. They must access with their LOGINMIUR username and password in the relevant field LOGINMIUR.

Applicants must enter all data necessary to produce the application and attach the required documents in PDF format.

As part of the selection process, a Selection Committee will evaluate the curriculum, titles and publications presented by the candidate.

**SELECTION CRITERIA:**

Preference will be given to candidates who have:

- Documented expertise in pancreas and pancreatic cancer biology.
- Documented expertise in the execution of genomic analyses, including the preparation of different types of genomic sequencing libraries.

**FURTHER INFORMATION:**

For more details on the selection process please refer to the Rectoral Decree n. 104/2017 (<http://www.hunimed.eu/it/lavora-con-noi/>) or send an inquiry to [ufficiodocenti@hunimed.eu](mailto:ufficiodocenti@hunimed.eu) or telephone +39 02.8224.5642.